AMENDMENTS TO THE CLAIMS

Please amend claims 8 and 29 as indicated below.

This listing of claims below will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) Method of producing a composite material, which comprises the following steps:

a) providing a hydrogel containing at least one further component that precipitates or forms a solid phase when an electrical field is applied to said hydrogel,

b) applying an electrical field to said hydrogel,

c) inducing a structuring operation, comprising a pore formation operation, in said hydrogel.

2. (Original) Method according to claim 1, in which the steps b) and c) are carried out together in view of time, one before or after the other, or in such a manner that one of the two steps is started after the respective other one has commenced but before the other step has been completed.

3. (Previously Presented) Method according to claim 1, characterized in that step c) is carried out by freezing the hydrogel and/or freeze-drying the hydrogel and/or by electrolysis of water and/or by electrolysis of aqueous solutions in the hydrogel.

4. (Previously Presented) Method according to claim 1, characterized in that step b) is carried out by means of at least two electrodes of opposite polarity.

5. (Previously Presented) Method according to claim 1, characterized in that in step b) said at least one further component, which precipitates or which forms a solid phase when an electrical field is applied to the hydrogel , forms a crystalline and/or amorphous phase or a combination of crystalline and amorphous phases.

6. (Previously Presented) Method according to claim 1, characterized in that in step b) a voltage of 3 V to 20 V is applied to the hydrogel and/or an electric current of an amperage of 0.5 A to 5 A flows through the hydrogel.

7. (Original) Method according to claim 6, characterized in that the applied voltage is a direct voltage or an alternating voltage.

8. (Currently Amended) Method according to claim 1, characterized in that the hydrogel is a hydrogel of one or more compounds selected from the group that consists of collagen, telopeptide-free collagen, collagen hydrolysates, proteoglycanes, glycosamino glycanes, polymethacrylic acids, polymethacrylates, polyvinyl pyrrolidone, polyvinyl alcohol, gelatin, polyglycolic acid, polylactic acid, copolymers of polylactic acid and polyglycolic acid, glucose, lipids, phospholipids, urates, hyaluronic acid, derivatives of hyaluronic acid, ~~in particular esters of hyaluronic acid, as well as~~ and ionic components selected from the group consisting of Na^{+}, K^{+}, Mg^{2+}, Ca^{2+}, Cl^{-}, HCO_3^{-}, HPO_4^{2-}, SO_4^{2-}, and F^{-}.

9. (Previously Presented) Method according to claim 1, characterized in that said at least one further component that precipitates or forms a solid phase when an electrical field is applied to the hydrogel is selected from the group consisting of calcium carbonates, calcium phosphates, in particular hydroxyl apatite, tri-calcium phosphates, brushite, octa-calcium phosphate, amorphous calcium phosphate, tetra calcium phosphate, monetite, calcium-deficient hydroxyl apatite, as well as compounds formed of ionic components selected from the group consisting of Na^{+}, K^{+}, Mg^{2+}, Ca^{2+}, Cl^{-}, HCO_3^{-}, HPO_4^{2-}, SO_4^{2-}, and F^{-}.

10. (Previously Presented) Method according to claim 1, characterized in that the hydrogel comprises a component which is electrically conductive, with this component being identical to or different from said at least one further component which precipitates or forms a solid phase when an electrical field is applied to the hydrogel.

11. (Original) Method according to claim 10, characterized in that the electrically conductive component is incorporated into the hydrogel or applied to the hydrogel.

12. (Previously Presented) Method according to claim 1, characterized in that the electrically conductive component is chemically and/or biologically inert.

13. (Previously Presented) Method according to claim 12, characterized in that the electrically conductive component is selected from the group consisting of precious metals and carbon.

14. (Previously Presented) Method according to claim 11, characterized in that the electrically conductive component is incorporated into the hydrogel and is there distributed homogeneously or non-homogeneously.

15. (Previously Presented) Method according to claim 11, characterized in that the electrically conductive component is applied to a surface of the hydrogel, and is structured by way of a surface treatment.

16. (Previously Presented) Method according to claim 1, characterized in that the hydrogel is present as a layer wound up before or after realization of step b) and/or step c).

17. (Previously Presented) Method according to claim 1, characterized in that the hydrogel is chemically and/or physically cross-linked.

18. (Previously Presented) Method according to claim 3, characterized in that freeze-drying is performed by freezing the hydrogel to a temperature in the range between –1 °C and –196 °C with subsequent sublimation.

19. (Previously Presented) Method according to claim 18, characterized in that the freezing of the hydrogel is carried out in a directional and/or non-directional mode.

20. (Previously Presented) Method according to claim 18, characterized in that the freezing of the hydrogel takes place over a period of approximately thirty minutes to four hours.

21. (Previously Presented) Composite material produced by a method according to claim 1.

22. (Previously Presented) Composite material according to claim 21, characterized by a pore-containing layer of a gel to which a solid phase in linked.

23. (Previously Presented) Composite material according to claim 21, characterized by a pore size ranging from 10 μm to 150 μm.

24. (Previously Presented) Composite material according to claim 21, characterized in that the solid phase is a calcium phosphate.

25. (Previously Presented) Composite material according to claim 21, further comprising at least one substance promoting cell growth or cell colonization or cell adhesion.

26. (Previously Presented) Composite material according to claim 25, characterized in that said at least one substance promoting cell growth or cell colonization or cell adhesion is a growth factor or a fetal serum or poly-L lysine, the growth factor being selected from the group comprising substances of the TGF-β super family, and the fetal serum being an animal fetal serum.

27. (Original) Composite material according to claim 25, characterized in that said at least one substance promoting cell growth or cell colonization or cell adhesion, is a serum which is of autogenous, syngenous, allogenous or xenogenous origin.

28. (Previously Presented) Composite material according to claim 21, characterized in that it further comprises biological cells.

29. (Currently Amended) The composite material according to claim 21, wherein said material is used as a substrate material for carrying biological cells~~, preferably human or animal cells or plant cells~~.

30. (Previously Presented) The composite material according to claim 21, wherein said material is used as tissue replacement in human or animal bodies.

31. (Previously Presented) The composite material according to claim 21, wherein said material is used as a substrate material for carrying biologically and/or chemically and/or catalytically active substances in the fields of sewage treatment, filtration, bioreactor technology and/or catalysis.